

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims

1. (Currently Amended) A friction material facing comprising:
a material facing having a first edge, a second edge, a first surface and a second surface;
a plurality of spaced first channels extending from said first edge toward said second edge a predetermined distance;
at least one of said plurality of spaced first channels associated with said first edge and extending between said first surface and said second surface through said material facing a first predetermined depth; and
said material facing further comprising a second channel associated with said second edge in fluid communication with said at least one of said plurality of spaced first channels, said second channel defining a predetermined second channel area extending between said first surface and said second surface a second predetermined depth, said second channel enabling fluid communication between a first area associated with a first side and a second area associated with a second side; wherein said second predetermined depth is smaller than said first predetermined depth, said

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

first predetermined depth extending one hundred percent of a distance between said first and second surfaces.

2. (Previously Presented) The friction material facing as recited in claim 1 wherein said first predetermined depth is one hundred percent of a distance between said first surface and said second surface.

3. (Previously Presented) The friction material facing as recited in claim 1 wherein said first area is associated with each of said plurality of spaced first channels, said predetermined second channel area enables fluid to communicate from said at least one of said plurality of spaced first channels to said second area associated with said second edge.

4. (Previously Presented) The friction material facing as recited in claim 2 wherein each of said plurality of spaced first channels comprises an associated second channel that enables fluid to communicate from said first area to said second area.

5. (Cancelled)

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

6. (Currently Amended) The friction material facing as recited in claim 1 wherein said at least one of said plurality of spaced first channels comprises a first wall situated in generally opposed relation to a second wall and a connector portion between said first wall and said second wall, said connector portion comprising a connecting surface that cooperates with said first wall and said second wall to define said second channel.

7. (Previously Presented) The friction material facing as recited in claim 6 wherein said connecting surface is planar and parallel to said first surface.

8 – 13 (Cancelled)

14. (Original) The friction material facing as recited in claim 1 wherein every other of said plurality of spaced first channels comprising a first depth that extends through said material facing and a second depth that extends a predetermined depth distance between said first surface and said second surface to provide said second channel.

15. (Cancel)

16. (Original) The friction material facing as recited in claim 6 wherein each of said plurality of spaced first channels comprises said connector.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

17. (Original) The friction material facing as recited in claim 16 wherein each of said connectors is associated with said second edge.

18. (Cancelled)

19. (Previously Presented) The friction material facing as recited in claim 16 wherein each of said connectors lies between said first and second edges.

20. (Cancelled)

21. (Original) The friction material facing as recited in claim 19 wherein each of said connectors is associated with said second surface.

22 – 23. (Cancelled)

24. (Original) The friction material facing as recited in claim 14 wherein said material facing comprises a plurality of second channels each of which extends between said first edge and said second edge and are not in fluid communication with said at least one of said plurality of spaced first channels.

25. (Cancelled)

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

26. (Original) The friction material facing as recited in claim 1 wherein said material facing comprises a plurality of friction areas comprising a predetermined shape and separated by said second channel.

27. (Original) The friction material facing as recited in claim 26 wherein said predetermined shape defines a generally straight edge associated with said first area.

28 - 29. (Cancelled)

30. (Original) The friction material facing as recited in claim 1 wherein said second channel is machined in said material facing.

31. (Original) The friction material facing as recited in claim 1 wherein said second channel is formed by blanking said material facing.

32. (Previously Presented) The friction material facing as recited in claim 1 wherein said material facing is cut from a web of material having said second channel formed therein.

33. (Previously Presented) The friction material facing as recited in claim 26 wherein said material facing is cut from a web of material having said second channel formed therein.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

34. (Currently Amended) A friction material for use on a friction material support, said friction material comprising:

a first edge associated with a first area;

a second edge associated with a second area;

a friction surface for engaging a friction component; and

an adhesive surface for adhering said friction material onto said friction material support;

a plurality of spaced apertures having an opening associated with said first edge, at least a portion of each of said plurality of spaced apertures defining a first channel in said friction material for receiving fluid; and

at least one of said plurality of spaced apertures being in fluid communication with a second channel that is also capable of receiving fluid, said second channel having a second channel depth that is less than a thickness of said material, said plurality of spaced apertures extending substantially entirely through said material, said at least one of said plurality of apertures being associated with said first edge and said second channel being associated with said second edge.

35. (Previously Presented) The friction material as recited in claim 34 wherein each second channel enables fluid to communicate from its associated spaced first channels to said second area associated with said second edge.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

36. (Original) The friction material as recited in claim 35 wherein said friction material comprises a plurality of second channels associated with said plurality of spaced apertures to enable fluid to communicate from said first area to said second area.

37. (Original) The friction material as recited in claim 34 wherein each of said plurality of first channels comprises a first channel depth that is greater than said second channel depth.

38. (Previously Presented) The friction material as recited in claim 34 wherein each of said plurality of spaced apertures comprises a first wall situated in generally opposed relation to a second wall and a connector portion between said first wall and said second wall, said connector portion comprising a connecting surface that cooperates with said first wall and said second wall to define said second channel.

39. (Previously Presented) The friction material as recited in claim 38 wherein said connecting surface is planar and parallel to said first surface.

40 – 42. (Cancelled)

43. (Previously Presented) The friction material as recited in claim 34 wherein said each second channel is in fluid communication with at least one of said plurality of spaced apertures.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

44 – 47. (Cancelled)

48. (Currently Amended) The friction material as recited in claim 34 wherein each of said plurality of spaced apertures comprises a first depth that extends through said material and a second depth that extends only partly ~~through~~ through said first surface and said second surface ~~to provide said plurality of second channels.~~

49 - 50. (Cancelled)

51. (Original) The friction material as recited in claim 38 wherein each of said connectors is associated with said second edge.

52. (Original) The friction material as recited in claim 38 wherein each of said connectors comprises a thickness of less than half of a thickness of said friction material facing.

53. (Cancelled)

54. (Previously Presented) The friction material as recited in claim 38 wherein each of said connectors lies between said first and second edges.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

55. (Cancelled)

56. (Original) The friction material as recited in claim 38 wherein each of said connectors is associated with said second surface.

57 - 59. (Cancelled)

60. (Currently Amended) The friction material as recited in claim 34 wherein said material comprises a plurality of friction areas comprising a predetermined shape and separated by said second channel.

61. (Original) The friction material as recited in claim 60 wherein said predetermined shape defines a generally straight edge associated with said first area.

62 - 63. (Cancelled)

64. (Currently Amended) The friction material as recited in claim 34 wherein each of said plurality of ~~second channels-spaced apertures~~ is machined in said material.

65. (Currently Amended) The friction material as recited in claim 34 wherein each of said plurality of ~~second channels-spaced apertures~~ is formed by blanking said material.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

66. (Currently Amended) The friction material as recited in claim 34 wherein said material is cut from a web of material having said plurality of ~~second channels-spaced apertures~~ formed therein.

67. (Original) The friction material as recited in claim 34 wherein said material is cut from a web of material having said second channel formed therein.

68. (Currently Amended) A friction material facing comprising:
a friction material;
a plurality of first channels in said friction material; and
a plurality of second channels in said friction material, said plurality of second channels and said plurality of first channels being in fluid communication and being capable of receiving a fluid, wherein each of said plurality of first channels comprises an open end and a closed end, wherein said plurality of first channels each comprise a first channel depth and said plurality of second channels each comprise a second channel depth, said first channel depth being greater than said second channel depth and extending substantially entirely through said friction material, said first channel depth being in fluid communication with a first area associated with a first edge of said friction material and said second channel depth being in fluid communication with a second area associated with a second edge of said friction material.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

69 – 70. (Cancelled)

71. (Previously Presented) The friction material facing as recited in claim 68 wherein said first channel depth extends one hundred percent a thickness of said friction material.

72. (Original) The friction material facing as recited in claim 68 wherein said plurality of first channels each extend through said friction material.

73. (Currently Amended) The friction material facing as recited in claim 68 wherein said plurality of first channels each extend through said friction material and have a first channel length that is less than a material width defined by a distance between said first edge and said second edge.

74. (Original) The friction material facing as recited in claim 73 wherein each of said plurality of second channels comprises a second channel length that generally corresponds to said material width.

75. (Original) The friction material facing as recited in claim 73 wherein each of said plurality of second channels comprises a second channel length that is less than said material width.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

76. (Original) The friction material facing as recited in claim 73 wherein each of said plurality of second channels comprises a second channel length that is less than said first channel length.

77. (Original) The friction material facing as recited in claim 73 wherein at least one of said plurality of second channels comprises a second channel length that is less than said material width.

78. (Original) The friction material facing as recited in claim 68 wherein said plurality of first channels are stamped and said plurality of second channels are formed by blanking.

79. (Original) The friction material facing as recited in claim 75 wherein said first channel length is greater than 50 percent of said material width.

80. (Original) The friction material facing as recited in claim 76 wherein said first channel length is greater than 50 percent of said material width and said second channel length is less than said first channel length.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

81. (Currently Amended) A friction member for use in a transmission assembly, said friction member comprising:

a metal support ring;

a friction material;

an adhesive for securing said friction material onto said metal support ring;

said friction material comprising:

a first edge associated with a first area;

a second edge associated with a second area;

a friction surface for engaging a friction component; and

an adhesive surface for adhering said friction material onto said metal support ring;

a plurality of spaced apertures in fluid communication with said first area and defining a plurality of spaced first channels in said friction material for receiving fluid, each of said plurality of spaced first channels having a first channel depth; and at least one second channel in fluid communication with said second area and also in fluid communication with said plurality of spaced apertures and also capable of receiving fluid, said at least one second channel having a second channel depth that is less than a thickness of said material and said first channel depth being greater than said second channel depth and extending substantially entirely through said friction material.

Application No. 10/677,565

Reply to Office Action of November 8, 2005

Amendment Dated: March 1, 2006

82. (Previously Presented) The friction member as recited in claim 81 wherein each second channel enables fluid to communicate from said at least one of said plurality of spaced first channels to said second area associated with said second edge.

83. (Original) The friction member as recited in claim 82 wherein said friction material comprises a plurality of second channels associated with said plurality of spaced apertures to enable fluid to communicate from said first area to said second area.

84. (Cancelled)

85. (Previously Presented) The friction member as recited in claim 81 wherein each of said plurality of spaced apertures is defined by a first wall situated in generally opposed relation to a second wall and a connector between said first wall and said second wall, said connector portion comprising a surface that cooperates with said first wall and said second wall to define said at least one second channel.

86. (Previously Presented) The friction member as recited in claim 85 wherein said connecting surface is planar and parallel to said first surface.

87 - 89. (Cancelled)

Application No. 10/677,565

Reply to Office Action of November 8, 2005

Amendment Dated: March 1, 2006

90. (Original) The friction member as recited in claim 81 wherein said at least one second channel is in fluid communication with at least one of said plurality of spaced apertures.

91. (Cancelled)

92. (Original) The friction member as recited in claim 81 wherein said friction material comprises a plurality of second channels in fluid communication with said plurality of spaced apertures, respectively, to permit fluid to pass from said first area, through said plurality of spaced apertures, and into said second area.

93. (Cancelled)

94. (Previously Presented) The friction member as recited in claim 81 wherein each of said plurality of spaced apertures comprises a first depth that extends one hundred percent through said material and a second depth that extends only partly through said material to provide said plurality of second channels.

95 - 96. (Cancelled)

97. (Original) The friction member as recited in claim 85 wherein each of said connectors is associated with said second edge.

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

98. (Original) The friction member as recited in claim 85 wherein each of said connectors comprises a thickness of less than half of a thickness of said friction material facing.

99. (Original) The friction member as recited in claim 98 wherein a first plurality of said connectors is associated with said first side and a second plurality of said connectors is associated with said second side.

100. (Previously Presented) The friction member as recited in claim 85 wherein each of said connectors lies between said first and second edges.

101. (Cancelled)

102. (Original) The friction member as recited in claim 85 wherein each of said connectors is associated with said second surface.

103. (Previously Presented) The friction member as recited in claim 81 wherein said material further comprises a second plurality of second channels each comprising said second predetermined depth between said first edge and said second edge.

104 - 105. (Cancelled)

Application No. 10/677,565
Reply to Office Action of November 8, 2005
Amendment Dated: March 1, 2006

106. (Previously Presented) The friction member as recited in claim 81 wherein said material comprises a plurality of friction areas comprising a predetermined shape and separated by said second channel.

107. (Original) The friction member as recited in claim 106 wherein said predetermined shape defines a generally straight edge associated with said first area.

108 - 109. (Cancelled)

110. (Currently Amended) The friction member as recited in claim 81 wherein each of said plurality of ~~second channels~~ second apertures is machined in said material.

111. (Currently Amended) The friction member as recited in claim 81 wherein each of said plurality of ~~second channels~~ second apertures is formed by blanking said material.

112. (Currently Amended) The friction member as recited in claim 81 wherein said material is cut from a web of material having said plurality of ~~second channels~~ at least one second channel formed therein.

Application No. 10/677,565

Reply to Office Action of November 8, 2005

Amendment Dated: March 1, 2006

113. (Currently Amended) The friction member as recited in claim 81 wherein said material is cut from a web of material having said ~~second plurality of channels at least one second channel~~ formed therein.

114. (Original) The friction member as recited in claim 81 wherein said metal support ring comprises a clutch plate.

115. (Original) The friction member as recited in claim 81 wherein said metal support ring comprises a synchronizer ring.

116. (Currently Amended) The friction member as recited in claim 81 wherein said metal support ring comprises one or more of the following:

- a synchronizer ring;
- a clutch plate;
- a torque converter clutch plate;
- a transmission band; or
- a drum brake lining.

Application No. 10/677,565

Reply to Office Action of November 8, 2005

Amendment Dated: March 1, 2006

117. (Currently Amended) A facing material for increasing fluid flow between a first edge and a second edge across a surface of said facing material comprising: a plurality of channels comprising a shallow area associated with the second edge and a deep area associated with the first edge for permitting fluid to flow from a first area across a or through the surface of said facing material, to a second area, said deep area extending one hundred percent completely through a thickness of said facing material and said shallow area being less than one hundred percent of said thickness.

118. (Currently Amended) The facing material as recited in claim 117 wherein said second channeldeep area is largershallower than said first channelsecond area.

119. (Currently Amended) The facing material as recited in claim 118 wherein said second channeldeep area is associated with a second endedge of said facing material.

120. (Cancelled)

121. (Currently Amended) The facing material as recited in claim 420117 wherein said second plurality of channels comprise a deep area that does not extend completely across a face of said friction material.

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